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International Criminal Justice Review 1999 9: 39
DOI: 10.1177/105756779900900103

International Criminal Justice Review
Volume 9, 1999

SOCIAL CAPITAL AND COVARIATES OF REOFFENDING RISK IN THE CHINESE CONTEXT*

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This paper explores the concept of social capital as a covariate of reoffending risk in the Chinese context through semiparametric estimation of proportional hazard models. The paper extends the concept of social capital by proposing a new concept of "negative social capital," which exists in nonconventional relationships such as gangs. The nonconventional relations seem especially salient within Chinese gangs because of their special cultural roots. The findings show that, after controlling for the usual covariates of reoffending risk used in Western literature, social capital and negative social capital variables show significant effects. Being single entails a significantly higher risk of reoffending than being married. Job arrangement after release significantly reduces reoffending risk. Participation in legal education reduces the risk of reoffending. Being a Chinese gang member significantly increases the reoffending risk.

Criminologists have a long history of interest in the study of recidivism. Theories and research have suggested and examined many covariates of reoffending risk. An extensive literature on recidivism exists (for reviews, see Baird, Storrs, & Connelly, 1984; Farrington & Tarling, 1985; Gottfredson & Tonry, 1987; Schmidt & Witte, 1988; Visher, Lattimore, & Linster, 1991). A large number of covariates have been identified. This paper extends the array of covariates by examining the effect of social capital in the Chinese context.

Social capital is one of the most important concepts developed in social science in recent years. Coleman (1988, 1990) has defined social capital as resources existing in social structure and relationships that facilitate social action. Sampson and Laub's work was the first to apply the concept of social capital in criminology (Laub & Sampson, 1993; Nagin & Paternoster, 1994; Sampson & Laub, 1992, 1993). In their theory on turning points in an offender's life course, Sampson and Laub explained how social capital plays an important role. Their theory proposes that a supportive marriage and employment reduce the risk of further offending. Yet social capital as an important theoretical concept has not received much attention in the recidivist literature. Some important questions remain: (a) Are social capitals significant covariates of risk of reoffending? (b)

*The data for this study were made available to the author by the Tianjin Academy of Social Sciences, China. I am grateful to the academy, to President Wang Hui, and to Professor Zhou in particular for their assistance. This study is partially supported by the Rhode Island College Faculty Research Fund.

How do social capital variables influence reoffending risk in a non-Western society? (c) Can we extend the concept of social capital to nonconventional structures or relationships (e.g., gangs)? In this paper, Chinese inmate self-report data from Tianjin, China, are used to explore these questions. The paper examines the role of social capital and finds a unique contribution of social capital variables in the Chinese community, specifically the job arrangement after prison release and legal education programs. The paper also extends the social capital concept to nonconventional relationships by proposing a new concept, that of negative social capital, and finds a significant effect on risk of reoffending.

SOCIAL CAPITAL AND RISK OF REOFFENDING

Social capital is a resource that exists in social relationships. Coleman (1988, 1990) proposed this concept to introduce social structure in the form of social resources into his purposive action paradigm. Coleman maintained that social capital is a central factor influencing human action. Two levels of social capital can be identified from Coleman's explanation of the concept: the resources that exist in interpersonal relationships and the social resources that exist in a community.

Employing the concept of social capital in their theory, Sampson and Laub have argued that the lack of social capital or investment is one of the primary features of weak social bonds (Sampson & Laub, 1993). They have explained that adult social ties are important in that they create interdependent systems of obligations and restraints that impose significant costs for translating criminal propensities into action (Sampson & Laub, 1993). Persons who have invested and accumulated much social capital in their marriages and their jobs over a long period of time would be less likely to commit a crime because they would be afraid of losing their social capital. Ties with their families and their jobs keep them from deviance. Thus a supportive marriage and a supportive job are important "turning points" in an offender's effort to desist. As an important theoretical concept, social capital shows its potential power as a predictor of risk of reoffending. Sampson and Laub's work has demonstrated the effects of quality marriages and jobs with U.S. data (Laub, Nagin, & Sampson, 1998; Sampson & Laub, 1992, 1993).

The role of marriage as social capital in Chinese life is perhaps just as important as it is in the Western societies. The Chinese have a long tradition of valuing marriage and family (for a review see, for example, Eastman, 1988). Marriage is a social capital expected to reduce reoffending risk. Employment is also an important social capital. The Chinese setting provides an excellent opportunity for examining the effect of obtaining a job on the reoffending risk because many communities in China have implemented job arrangement programs for released offenders (Guo, 1993; Yang, 1994). In the Western context, by

contrast, it is typically difficult for offenders to get a job after release from prison; Laub and Sampson have pointed out that the opportunity of a good job may depend purely on luck (Laub & Sampson, 1993). The Chinese have realized that having a job after release from prison reduces the chance of reoffending. Chinese researchers have reported that released prisoners are more likely to associate with "bad elements" if they have no job and are more likely to resort to crime to survive if they have no job (Guo, 1993; Yang, 1994).

The job arrangement programs in Chinese communities generally include collaborative efforts between the workplace where the offender worked before being arrested, the prison authority, and family members and residential committee leaders. A common protocol is that all parties come to an agreement on the program. The offender promises to reform himself through labor, obey the prison regulations, and participate in the vocational and work skill training programs. In return, the original workplace promises to accept the rehabilitated offender after his release and not to discriminate against him. The community and local government will help him in his living arrangements and in adapting to a normal life. For an offender who had no job before entering prison, the local government's labor department will be responsible for arranging a job or for helping him to be self-employed. For inmates coming from rural areas, the local town government is responsible for helping to resolve life and work essentials such as allocating land, fertilizers, and seeds for plants. Because the government supports it administratively and financially, the program is available in many communities. It is an important social capital in facilitating offenders' return into society.

In addition to marriage and employment, another important community social capital in China can be found in the legal education programs. The Chinese believe that many people repeatedly commit crimes because of the "lack of legal and moral consciousness" (Xue, 1992). The purpose of legal education is to enhance the knowledge and awareness of law among citizens and to enhance the legal and moral consciousness of citizens (Xue, 1992). The program uses media and organized classes in communities and schools to publicize laws and legal knowledge. Officers from the local department of justice, public security bureaus (i.e., the police, people's procuratorates, people's courts), and lawyers all have responsibility to participate in the legal education activities in communities to diffuse the knowledge of law. To carry out this program, organization and coordination among different agencies has been established. The Ministry of Justice leads the program at the national level, and the departments of justice at the provincial and county levels are in charge of the implementation of the program. Public security agencies, people's procuratorates, and people's courts have all established within their respective organizations a department of law publicity/education. The Chinese have recently finished their second five-year

legal education program and claim that the program is successful.[1] Legal education programs as important resources in the community are important social capital accessible to released offenders and are expected to increase the offenders' knowledge of law and to reduce the risk of reoffending.

The concept of social capital focuses on the resources that people have access to in conventional relationships and institutions. Yet offenders very often have ties with deviant institutions and deviant cultures such as gangs. Extensive research on gangs has documented the special ties that exist among gang members (e.g., Thrasher, 1927; Weisfeld, 1972; Weisfeld & Feldman, 1990). These ties are the foundation on which a gang appears to be a gang in the first place. Thrasher, for example, in his monumental work on gang research, proposed that gangs supply needed interaction and social contact for their members. He maintained that gangs provide a feeling of belonging and togetherness for participants. He pointed out how gangs help build unity among the gang members, bringing about increased cohesion among group members and helping to draw the gang into a more formal, organized, and long-term system of interaction (Thrasher, 1927). Recent work on gangs has continued to find evidence that gangs function as a resource for gang members (e.g., Hochhaus & Sousa, 1988; Jankowski, 1991, p. 43; Johnstone, 1983; Klein & Maxson, 1989; Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993; Vigil, 1988, p. 154; Weisfeld & Feldman, 1990).

A major factor in most discussions of gang behavior involves the degree of group cohesion. Without this cohesion, the ties among gang members, there would be no gang. People, and most especially juveniles, who find themselves faced with poor opportunities for advancement and lack of familial support may find support and acceptance in gangs. The tie with the gang is a valuable resource for them. It provides emotional support, power, protection, and sometimes survival essentials (Weisfeld & Feldman, 1990). It is a source of pride to be in a gang, and it is a source of pride to use the symbols of the gang (e.g., its name and clothing). This tie with the gang—or, more broadly, with the deviant subculture in the gang—is a different type of social capital, one that I would like to call "negative social capital." Gang members may sustain their offending behavior because they are afraid of losing their negative social capital. (The term "negative" is thus used to reflect its potential effect in facilitating deviant actions.) I suggest that it is the net effect of positive and negative social capital that determines the probability of movement away from or retention of a criminal career.

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[1]Troyer (1989) provides some observations on successful stories. He concludes that legal education has the potential to affect the thinking and behavior of Chinese citizens. He also discusses why Westerners tend to be suspicious about the effect of legal education.

Although the concept of negative social capital should also work for gangs in Western society, examples of strong relationships are particularly easy to find in the Chinese context (Lai, 1990; Xu, 1990). Chinese researchers assert that Chinese gangs have the "characteristic of 'brotherhood'" and the "characteristic of a feudal secret society" (Lai, 1990; Xu, 1990). "Feudal" is a standard term in China that refers to the social order in ancient China.

The reason for the visibility of strong bonds in Chinese gangs can be understood in terms of traditional Chinese culture. Chinese culture is traditionally group-oriented and emphasizes strong ties among members of groups. Traced back to Confucius 2,500 years ago, the concept of *Yi* is frequently explained in two related meanings: righteousness and loyalty to family and friends. The opposite of *Yi* is desire for personal material gain. In "The Analects of Confucius" (Legge edition, 1960, p. 170), Confucius said, "A virtuous person cares about the 'Yi'; an immoral person cares about personal material gains." That the *Yi* is valued over material gain is an ideal rooted in the minds of many Chinese. *Yi* considered as loyalty to friends has been historically accepted as the fundamental moral code of many Chinese gangs. The status or prestige of a gang member is often evaluated by his practice of *Yi*. Those who put personal gain before loyalty are frowned upon. "A virtuous person would die for his friends" (Shi Wei Zhi Ji Zhe Si) is a popular saying hundreds of years old; it probably best reflects the meaning of this cultural tradition.

It is very common for gang members, regardless of the size of the gang, to swear their "brotherhood" through a formal ritual. Qingzhang Xu, the deputy director of the Public Security Research Institute of the Public Security Ministry in Shanghai City, has observed that recent Chinese criminal groups "initiate and follow the ways of feudal societies and Mafia organizations in 'gongfu' (martial arts) and chivalrous stories and films which refer to kowtowing, smearing blood, swearing oaths as sworn brothers and sisters, arranging ranks, and making rules for the gang. . . . Their purpose is to condense and solidify the group itself" (Xu, 1990). Chinese researchers note that Mafia societies based in Hong Kong, Macao, and Taiwan have developed and expanded their organization to include hooliganism, blackmail, theft, and robbery, especially in the coastal areas of China (Lai, 1990; Qi, 1990; Xue, 1992).

Perhaps it is because the subculture of the Chinese gang has its roots in this mainstream traditional cultural value that the ties among gang members are all the more salient. These ties provide a strong resource of satisfaction and sense of worth for an individual belonging to a gang. They are valuable "negative social capital." Just as the concept of social capital helps us understand the diminution of a criminal career in Sampson and Laub's theory, the concept of negative social capital is helpful in understanding the attachment of a gang member to the gang and his resources for sustaining his criminal career.

In sum, social capital, as resources existing in personal relationships such as marriage and in community relationships such as job arrangement and legal education programs, is expected to reduce the risk of reoffending. Negative social capital, existing in nonconventional relationships such as gangs, is expected to increase the risk of reoffending.

COMMON COVARIATES OF REOFFENDING RISK

In examining the effect of social capital variables, major covariates of reoffending risk must be controlled. An extensive literature exists on risk of recidivism (see reviews in Baird, Storrs, & Connelly, 1984; Farrington & Tarling, 1985; Fisher, 1984; Gendreau, Little, & Goggin, 1996; Gottfredson & Tonry, 1987; Hanson, Scott, & Steffy, 1995; Jesness, 1987; Katsiyannis & Archwamety, 1997; Lattimore, Visher, & Linster, 1995; Schmidt & Witte, 1988; Visher, Lattimore, & Linster, 1991). A large number of covariates have been identified. Specific conclusions vary, but generally the literature shows that the most common variables that are found to consistently have significant effects include age at first adjudication, prior criminal behavior, number of prior commitments to correctional facilities, drug or chemical abuse, and alcohol abuse. For juveniles, covariates reflecting family and parental control, school problems, and peer relationships are typically found to be important.

Western research has consistently reported that age at first adjudication has a negative effect on risk of reoffending; that is, the older the offender at first adjudication, the lower his or her risk of reoffending (e.g., Farrington et al., 1990; Wolfgang, Sellin, & Figlio, 1972). Many studies have reported on the effect of the number of prior offenses on the risk of recidivism (e.g., Farrington, 1989; Huesmann, Eron, Lefkowitz, & Walder, 1984; Piper, 1985; Tracy, Wolfgang, & Figlio, 1985; Weiner, 1989). One study (Weiner, 1989) reported that a previous arrest record for a violent crime was only slightly predictive of future arrests for violence. Based on these results, this paper hypothesizes that the effect of prior criminal offense on the risk of reoffending is positive and that the higher the number of prior offenses the higher the risk of reoffending. Previous conviction is an important covariate; specific measures vary across the data set, often based on available measures.

Drug and chemical abuse is a typical predictor in Western literature. However, it was not found to be a significant problem in Tianjin when the survey was conducted. For this reason, the researchers at the Tianjin Social Science Academy did not include a category for "drug offenses" on the questionnaire. Drug dealing and use were outlawed by the Chinese government in 1950 and were basically eliminated until the late 1980s, when they reappeared in the provinces on the southwestern border of China, mostly Yunnan, Guangxi, Sichuan, and Guangdong. Nevertheless, the number of criminal violation cases

involving drug dealing and use has been too small to be listed as a separate category in public security (police) national case reports (Law Yearbook of China Editorial Board, 1990, 1991). In 1991, the total number of drug dealing and use cases increased 127 percent over 1990 (Law Yearbook of China Editorial Board, 1990, 1991); the total number of cases was 8,344 (1991, p. 861), which constituted 0.35 percent of all criminal cases reported by the national case reports. In 1992, based on his research on the drug problem in China, Chinese criminologist Shi Huanzhang concluded that "no large drug organization or market exists in China" (Shi, 1992, p. 72). Today the drug problem is becoming more serious in China as social control loosens up with the development of economic reform, but in Tianjin when the survey was conducted in 1991, as far as common knowledge among academic researchers was concerned, the problem was largely irrelevant.

This research investigates the covariates of reoffending risk for Chinese inmates, not specifically for young offenders. As a result, family and parental control, school problems, and peer relationship variables are not included in the analysis. Based on these considerations and available data, control variables include age at first adjudication (onset) and total prior number of offenses. Length of last sentence is also controlled.

METHODOLOGY

Data and Measurements

The data for this research were obtained from a survey of inmates conducted by faculty members in the Center of Criminology at the Tianjin Academy of Social Sciences. Tianjin is one of the three largest cities in China, with a population of 9.28 million at the end of 1993 (the other two cities are Beijing, population 11.12 million, and Shanghai, population 13.49 million) (PRC State Statistical Bureau, 1994). The survey was conducted in the fall of 1992. The survey was sponsored and financially supported by the city government of Tianjin. Based on the available resources, a 25 percent sample was randomly drawn from the roster of all inmates admitted into Tianjin prisons in 1991. This procedure yielded a total of 1,063 inmates. The questionnaire was anonymously self-administered. The research team was composed of professors and researchers at the academy and some trained university graduates in social sciences. The researchers explained to the inmates the purely academic nature of the research. Inmates were assured of complete anonymity and completed their questionnaires voluntarily and privately. The survey was administered by the researchers without the participation of prison staff. Among the 1,063 inmates, 93 (8.7 percent) were illiterate or only knew a few words and asked for assistance from research staff in completing their questionnaires. Inmates were very cooperative

in the survey; the response rate was close to 100 percent. High response rates have been reported in many Chinese surveys (Blau & Ruan, 1990; Walder, 1990, 1992, 1995).

The analysis for this study is limited to the 269 recidivists who had experienced at least one rearrest. The procedure analyzes how social capital indicators predict the risk of reoffending since last release. Inmates who were not recidivists are excluded from the analysis. For each recidivist, the duration of nonoffending is calculated. This is the duration between the date of last release from prison and the date of rearrest for the current offense. This duration is the length of time until rearrest occurs. Inasmuch as all recidivists have been rearrested for their current offense, the failure rate is 100 percent; no cases are censored. Because the original sample is a random sample representing the inmate population, the subsample of 269 recidivists can be regarded as a representative sample of all recidivists in the inmate population in Tianjin prison.[2]

The formulation for the question of risk assessment is as follows: Having remained nonoffending for a length of time t, what is an individual's chance of reoffending? That is, what is the conditional probability of reoffending at the time interval $t + \Delta$, given that the person has not reoffended prior to time t? This is precisely the kind of question for which survival analysis is designed. Survival analysis is employed in this research to estimate the effects of covariates on the hazard of reoffending. The dependent variable is the length of time to rearrest, that is, the duration of nonoffending between the last release and the commission of the current offense. This duration is calculated for each inmate from the data on the date of last release from prison and the date of arrest for the current offense. This is consistent with the popular measure of recidivism in the Western literature. The average duration of nonoffending was 39.3 months.

Measures of the usual Western predictors of recidivism discussed above are as follows. Age at first adjudication is measured by the question "What was your age when you were first sentenced by a court?" The number of offenses is measured by the total count of offenses that had been punished by the justice authorities. Length of the last sentence is determined by the question "How many months were you sentenced by the court for your last offense?"

In the exploratory analyses, length of sentence consistently showed a significant effect and therefore must be controlled to adequately estimate the effect of social capital variables, which are the focus of this paper. The significance of length of sentence is perhaps due to its approximation to the seriousness of the crime for these Chinese inmates—the longer the sentence for the last offense, the more

[2]Performing analyses only on recidivists raises the issue of sample selection bias. The most regularly used procedure for correcting this problem was developed by Heckman (1979) and Berk (1983). Recently, however, Stolzenberg and Relles (1990), using Monte Carlo simulations, found that "the method can easily do more harm than good" (p. 408). In view of these methodological concerns, and given that the substantive interest of the present paper is only in the recidivist subpopulation, this paper does not apply the Heckman-Berk corrections.

serious the last offense. There are some indications that this approximation may be reasonable, because answers to three other questions regarding adequacy of sentence indicate that most inmates think that their adjudications were adequate. One question asked, "Do you think that the facts used by the court for your sentence are accurate?" Fully 44.2 percent of the inmates responded that they were accurate; 42.2 percent responded that they were largely accurate; only 12.5 percent responded that they were not accurate. When asked "Do you think that the judgment of the seriousness of your crime by the court is accurate?" 47 percent responded that "it is accurate"; 40 percent responded that "it is largely accurate"; only 12.3 percent responded that "it is not accurate." When asked "Do you think your sentence is adequate?" 63 percent answered that "yes, it is adequate"; 31.8 percent answered that "it is harsher than I deserve"; only 3.5 percent answered that "it is mistaken."

Marriage as social capital is measure by the dummy variable "single."[3] The dummy variable was coded 1 when a person was single, 0 otherwise. Among all the 269 recidivists on which the current analysis is based, 65.6 percent were single; 34.4 percent were not single. Job arrangement is another dummy variable, coded 1 when the respondent answered that he had a job arranged for him after his last release from prison and coded 0 when he had no such job arranged. Among the recidivists, 27.2 percent had had a job arranged for them, and 72.8 percent had not. Legal education is also measured by a dummy variable indicating whether there had been legal education programs carried out in the community where the inmate resided. It was coded 1 when the respondent answered that there had been legal education and 0 when the respondent said that there was no legal education program. Among the recidivists, 30.2 percent answered that there had been legal education programs in their neighborhood. A gang member was identified from answers to questions about gang activities, and a dummy variable was constructed such that a gang member was coded as 1 and a non-gang member was coded as 0. Among the recidivists, 38 percent were gang members, and 62 percent were not gang members.

Analytical Procedure

Survival analysis has increasingly been applied in criminology in recent years (Gruenewald & West, 1989; Maltz, 1984; Schmidt & Witte, 1988). Instead of simply classifying people into either recidivists or nonrecidivists, which is the typical case when logit or probit analysis is used in prediction of risk of reoffending, the survival analysis models the "time to failure"—in our case, the

[3]Laub, Nagin, and Sampson (1998) and Sampson and Laub (1992, 1993) have discussed the importance of the quality of the marriage. Unfortunately, the only available measure in our data set is marital status; this result is therefore only exploratory in nature.

time to reoffending, that is, the duration of nonoffending from the time of last release to the time of rearrest for current offense. Hazard models take into account the fact that some offenders reoffend shortly after release and others reoffend after a long period of nonoffending. The probability of reoffending during the time interval $t + \Delta t$ given that the person has not reoffended until time t is called the hazard. This is different from determining the simple probability of reoffending no matter whether the new offense occurred shortly after previous offense or a longer time after.

In some recent criminological applications of survival analysis, the parametric models are skillfully developed and estimated (e.g., Lattimore et al., 1995; Visher et al., 1991). In other cases, variables thought to influence the hazard are introduced into the analysis as stratification variables; hazards are then nonparametrically estimated for different strata and then compared graphically or analytically (e.g., Joo, Ekland-Olson, & Kelly, 1995).

Because the validity of the parametric specification depends on the author's theoretical assumptions, the development of parametric models requires strong theories specifying the mathematical form. Theories at this level are rarely available in current criminology. On the other hand, estimating the effects of independent variables is different from treating independent variables as strata variables and inferring the effects of independent variables by comparing hazard curves for different strata. Also, this type of nonparametric analysis does not provide meaningful coefficients reflecting the effects of variables on hazards.

In this paper, the semiparametric estimation of the Cox proportional hazard model is applied for the analysis (Cox, 1972, 1975; Lancaster, 1990). The proportional model is an effective means for identifying significant predictors for prediction models. Its assumptions are much weaker than those of parametric models. It makes no assumption about the distributional form of the hazard, whereas parametric models do make distributional assumptions. The coefficients from the semiparametric estimation have straightforward explanations. In criminology a number of studies have used the Cox proportional hazard model (e.g., Barton & Turnbull, 1981; Rhodes & Matsuba, 1985; Sherman & Berk, 1984; Witte, Woodbury, Smith, Barreto, & Beaton, 1982). However, it has not become a widely used method like probit and logit.

In the proportional hazard model, the hazard is a function of the linear combination of a vector of explanatory variables x with unknown coefficients β. The hazard $\lambda(t,x,\beta,\lambda_0)$ is factored as

$$\lambda(t,x,\beta,\lambda_0) = \psi(x,\beta)\lambda_0(t)$$

where λ_0 is a "baseline" hazard corresponding to $\psi(.) = 1$. In this specification, the effect of explanatory variables is to multiply the hazard λ_0 by a factor ψ that does not depend on duration t. A specification of ψ most often used is

$$\psi(x,\beta) = e^{(x'\beta)}$$

The advantage of this model is that the estimation of the regression coefficient β does not require specification of the baseline hazard λ_0. Cox suggested a partial-likelihood approach for the estimation of the model (Cox, 1972, 1975). With this approach, the β in the proportional hazard model can be estimated without specifying the form of the baseline hazard function λ_0.

Suppose that there are d observed failures from the sample of size n, and they are ordered from shortest duration to longest duration, $t_1 < t_2 \ldots < t_d$. Let J_j be the label of the subject who fails (i.e., reoffends) at t_j. All the people who have not been rearrested just before time t_j when the jth person is rearrested are called the risk set for t_j. Let this risk set be denoted $\Re(t_j)$. Write $\Re(t_j) = \{i:t_i \geq t_j\}$ for the risk set just before the jth ordered failure (reoffense). Then the likelihood function is

$$\mathcal{L} = \prod_j^d \frac{\lambda(t_j, x_j, \beta)}{\sum_{k\in\mathcal{R}(t_j)} \lambda(t_k, x_k, \beta)} = \prod_j^d \frac{\psi(x_j, \beta)}{\sum_{k\in\mathcal{R}(t_j)} \psi(x_k, \beta)}$$

The likelihood function is a product of conditional probabilities. Given that a rearrest occurs at t_j, the jth conditional probability in the product represents the likelihood that the rearrest occurs for the particular person who actually had the rearrest at t_j rather than for any other persons who were at risk (potential reoffenders). Each term in the product is the ratio of the hazard for the individual who has been rearrested at t_j divided by the sum of the hazards for individuals who have not been arrested just prior to time t_j.

The formula above shows that the baseline hazard function $\lambda_0(t)$ is canceled out between the numerator and the denominator in the calculation of the likelihood function. Therefore, the likelihood function can be written solely as a function of parameters β for independent variables. That means that we need not specify λ_0, eliminating the necessity of a strong assumption for λ_0. That is why the estimation method is called semiparametric. The only assumption is of proportional hazards, which is much weaker than fully specified parametric models. In fact, even when the proportional hazards assumption is violated, it is often a satisfactory approximation to the true model.

RESULTS

The results of the estimation are reported in Table 1 and Table 2. Table 1 reports the semiparametric estimation of hazard model 1: the effects of criminal offending variables on the hazard. Table 2 reports model 2: the full model, which includes the effects of social capital on the hazard.

Table 1

Semiparametric Estimation of Hazard Model 1
Effects of Common Risk Predictors

Common risk predictors	Coef	Exp (Coef)	SE (Coef)	z
Age at first sentence	-0.03918*	0.962	0.013727	-2.855
Months of last sentence	0.00247*	1.002	0.000833	2.966
Prior number of offenses	-0.00669	0.993	0.017884	-0.374

Note. Likelihood ratio test = 14.6 on 3 df, $p = 0.00221$, $n = 265$

*Indicates statistical significance of a one-tailed test at $p < .05$ level.

Table 2

Semiparametric Estimation of Hazard Model 2
Effects of Social Capital Variables

Common risk predictors	Coef	Exp (Coef)	SE (Coef)	z
Age at first sentence	-0.01485	0.985	0.013739	-1.081
Months of last sentence	0.00269*	1.003	0.000897	2.999
Prior number of offenses	-0.00613	0.994	0.016701	-0.367
Social capital	**Coef**	**Exp (Coef)**	**SE (Coef)**	**z**
Single	0.42564*	1.531	0.069957	6.084
Job arrangement	-0.23267*	.7923	0.077446	-3.004
Legal education	-0.20784*	.8123	0.113655	-1.829
Gang membership	0.12389*	1.132	0.065134	1.902

Note. Likelihood ratio test = 81.3 on 7 df, $p = 7.44e\text{-}015$, $n = 269$

*Indicates statistical significance of a one-tailed test at $p < .05$ level.

In each Table, the first column gives the independent variables included in the model, the second column gives the coefficient βs, the third column presents e^{β}, the fourth column shows the standard error of β, and the fifth column gives z values.

One of the advantages of the proportional hazard model is that the coefficients are interpreted easily. e^{β} is the relative probability of reoffending for two offenders who differ in an independent variable by one unit. For example, in

Table 1, the coefficient of age at first sentence is -0.03918. $e^{-0.03918} = 0.962$, so an offender whose age at first sentence was one year older had 0.962 times the risk of reoffending compared to the offender whose age at first sentence was younger; that is, the older the onset the lower the probability of reoffending. Equivalently, the earlier the respondent had his first sentence, the higher the probability that he would reoffend. This is consistent with well accepted Western theories. The standard normal test distribution $z = -2.855$ indicates that the effect is highly statistically significant at $p < .05$. After the inclusion of other variables in the model in Table 2, the effect becomes insignificant ($z = -1.081$), but the direction of the effects is consistent with the theoretical expectations in Western literature.

Marriage, job arrangement, and legal education reflect positive social capital. Gang membership reflects negative social capital. These are included in model 2, and their effects are reported in Table 2. *Single* is a dummy variable that was coded 1 if a person was single, 0 if a person was married. The coefficient is 0.426. e^{β} is 1.531, which is significant, indicating that a person who was single was about 1.5 times as likely to reoffend as a person who was married. Job arrangement is also statistically significant: The coefficient indicates that prisoners who had a job arranged after release were 21 percent less likely to reoffend (1 - 0.79 = 0.21) than those who did not have jobs arranged. Legal education is also statistically significant: The result shows that prisoners whose neighborhoods had a legal education program were 19 percent less likely to reoffend than those whose neighborhoods did not have legal education programs. The coefficient β for gang membership is 0.123 in model 2; e^{β} is 1.132, indicating that an offender who was a gang member was about 1.13 times as likely to reoffend as one who was not a gang member. The effect is statistically significant. Likelihood ratio tests for both models are highly significant. This suggests that the models provide considerable explanatory power compared with a naive model.

SUMMARY AND DISCUSSION

The concept of social capital proposed by Coleman (1988, 1990) is a powerful concept in explaining social action. Social capital is a resource for social action that is different from financial capital and human capital. Social capital consists of the resources existent in social relationships and community that are available to actors for facilitating purposive action. This paper explores the use of social capital as a covariate of reoffending risk in the Chinese context. This paper extends the literature in three aspects. First, it explores the effects of the two Chinese community social capitals, job arrangement after prison release and legal education, and finds that they are significant covariates of risk of reoffending. Second, this paper further extends the concept of social capital by proposing a

new concept of negative social capital. Negative social capital exists in nonconventional relationships, such as gangs. It is a valuable resource in facilitating the deviant actions of gang members. The analyses found that gang membership increases the risk of reoffending. Third, this paper examines in the Chinese setting the effects of some of the most commonly used covariates of reoffending risk and finds that they generally show results consistent with research conducted in Western settings.

Sampson and Laub (Laub & Sampson, 1993; Sampson & Laub, 1992, 1993) were the first to apply the concept of social capital to criminology. They proposed that marriage quality and employment are important social capitals that reduce the risk of recidivism. The present study extends these finding to confirm the effects of marriage and employment in a very different culture. In particular, the Chinese context offers a unique setting for examining the effect of employment because the Chinese have implemented a program to arrange jobs for released offenders. The released offenders can get a job by formal arrangement and not by "pure luck" or "chance" (Sampson & Laub, 1992, 1993) as is usually the case in Western settings. The Chinese offenders' chances of obtaining a job depend largely on the availability of the resource program in their community, not on their personal traits. Personal traits that influence getting a job can also influence the reduction of risk of reoffending; thus, when personal traits become the major factor influencing the chance of getting a job after release, a sample selection bias can occur. In this respect, perhaps, examining the effect of employment from the Chinese program is especially useful.

The legal education program as community social capital goes beyond what has been examined in Western settings. The Chinese are firm believers in education and thought changing. Confucians believe that humans can be educated. Mencius, in particular, believed that human beings are born with good nature. People can be taught to be good and deviant minds can be changed through education (for elaborated discussion, see Dawson, 1982; Munro, 1977; Troyer, 1989). The exploration of the legal education program shows that it indeed has a significant effect on risk of reoffending.

Extending the concept of social capital, this paper proposes the new concept of negative social capital. This concept is helpful in understanding nonconventional relationships and how they work in influencing deviant action. Gangs function as resources for gang members and provide support to gang members. These resources exist in relationships among gang members. The concept of negative social capital emphasizes the resourcefulness of a gang for gang members in facilitating deviant actions.

Policy implications are especially salient in the significant effect of job arrangement programs and legal education programs. Results show that helping offenders to build positive social capital and reducing their access to negative social capital is important. Although implementing similar programs in the

United States may have culturally specific difficulties, the Chinese evidence showing that these programs influence the risk of reoffending is worth our attention. Programs that help offenders obtain jobs and receive legal education are worth examining. The effect of these social capitals may be universal, just like those common risk predictors examined in the present study.

Finally, a word of caution should also be noted. The difficulty of obtaining data on criminal offenders in China is well known. The current data are very limited in the scope of the indicators available for analyses. In particular, the lack of a direct measure of crime seriousness warrants caution in interpreting the coefficients. The sample was drawn from a prison located in one city, Tianjin. This limits the generalizability of the conclusion. A national sample would certainly be more desirable, but it is not feasible in the current situation in China. Further replications of this study in other areas of China are needed. Although the data are limited and conclusions remain tentative, I hope that this exploratory research will raise interest in further investigations on recidivist research in China.

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